REMARKS / ARGUMENTS

Claims ?? remain pending in this application. Claims 13, 15 and 20 have been canceled without prejudice or disclaimer. New claims 19-20 have been added.

Priority

Applicants request acknowledgment of the claim for priority in this case. The priority document was filed in the International Phase of this application and is referred to in the Official Filing Receipt mailed October 26, 2001.

Specification

The specification has been amended to overcome the Examiner's objections. No new matter has been added

Drawings

The specification has been amended to be consistent with Figs. 9 and 10 of the drawings. No amendment to the drawings is believed to be necessary. In addition, no new matter has been added.

35 U.S.C. 112

The rejection of claim 13 under this section has been rendered moot by the cancellation of this claim without prejudice or disclaimer.

Claims 15-18 have been amended to overcome the Examiner's rejection under this section.

35 U.S.C. §§102 and 103

Claims 13-18 stand rejected under 35 U.S.C. §102(b) as being anticipated by JP 08-238418. Claim 15 stands rejected under 35 U.S.C. §103(a) as being unpatentable over JP 08-238418 in view of JP 61-003040. These rejections are traversed as follows.

The present inventors, through a detailed study of the decomposing reaction of a fluoric compound such as SF_6 and NF_3, have discovered that decomposition products are produced only in specific combinations among SO_2F_2, N_2O, and CO. In other words, the present invention has been arrived at by taking this fact into consideration. The pending claims, after amendment, cite that a single reactor is charged with a catalyst for decomposing a fluoric compound at an upstream portion thereof and with a catalyst for removing harmful components produced in decomposition of the fluoric acid at a downstream position thereof. Therefore, a compound is decomposed into a substance that is not harmful and is ready to be absorbed in water or in an alkaline aqueous solution. Thus, the present invention is completely different from the art cited by the Examiner in both composition and its

attending advantages. It is submitted that the pending invention could not be arrived at by one with ordinary skill in the art based upon the art cited by the Examiner.

Claim 14 has been amended to recite that the reactor has a fluorine compound decomposition catalyst for decomposing the fluorine compounds including at least one of PFC, HFC, SF_6 or NF_3 charged upstream therein. Claim 14 also recites that the harmful compound removing catalyst for the decomposition of at least one of CO, SO_2F_2 and N_2O formed by the decomposition is charged downstream of the reactor. Thus, it is clear that the possible decomposition of the fluoric acid to which the present invention pertains falls into six substances: SO_2F_2, N_2O, SO_2F_2 + N_2O, SO_2F_2 +CO, N_2O + CO, and SO_2F_2 + N_2O + CO. Therefore, this clearly teaches that CO alone could not actually be produced from the fluoric compound. It is submitted that the amendment to claim clarifies this feature of the present invention.

None of the cited references disclose the presently claimed features of the presently claimed invention. JP-08-238418 discloses the decomposition of a fluorine compound using four components: titanium oxide as the first component, tungsten as the second component, a sulfuric compound and a phosphorous compound as the third component, and Au, Pt, Pb, Rh and Ru as the fourth component. However, this reference does not describe or suggest catalysts for decomposition of fluorine compounds as in the present invention. In other words, this reference does not

disclose SO_2F_2, N_2O, $SO_2F_2 + N_2O$, SO_2F_2 +CO, N_2O + CO, and $SO_2F_2 + N_2O$ + CO are produced in the process.

Furthermore, the reference discloses that the CO gas produced in the decomposition of the fluorine compound undergoes an oxidizing reaction at 150 - 200° C with a CO oxidative reaction catalyst such as Pb - SnO or Cu - Zn - Al_2O_3. On the other hand, according to the present invention, the temperature of the decomposition of the fluorine compound and the harmful compound, is 700° C, wherein the fluorine compound undergoes decomposition through the catalyst at the upstream position of the reactor vessel. The harmful component undergoes decomposition through the catalyst for removing the harmful component at a downstream portion of the vessel.

As mentioned above, the present inventors, through a detailed study of the decomposing reaction of a fluoric compound such as SF_6 and NF_3, have discovered that decomposition products are produced only in specific combinations among SO_2F_2, N_2O, and CO. In other words, the present invention has been arrived at by taking this fact into consideration.

JP 61-003040 neither discloses or suggest using the particular decomposition catalyst for producing specific harmful components as mentioned by operating the process at a particular temperature. Furthermore, there is no description of the successive decomposing of the harmful component at the downstream portion of the same reactor vessel in which the fluorine compound is decomposed.

EP 885648 discloses a process for decomposing a fluorine compound at 200 - 800° C with a decomposing catalyst of Al in combination with at least one of Zn, Ni, Ti, Fe, Sn, Co, Zr, Ce, Si and Pt to produce hydrogen fluoride or carbon dioxide. This reference neither discloses nor suggests that the fluorine compounds are decomposed into harmful components including any one of SO_2F_2, N_2O, SO_2F_2 + N_2O, SO_2F_2 +CO, N_2O + CO, and SO_2F_2 + N_2O + CO using a particular catalyst charged at an upstream portion of the reactor vessel and decomposing the harmful component using a specific catalyst at a downstream portion of the same reaction vessel. As such, it is submitted that all the pending claims patentably define the present invention over the cited art.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

John D Barnitz

By Reg No 35061
FOR Shrinath Malur
Reg. No. 34,663
(703) 684-1120